zSeries Application Pattern Generator Wizard

The zSeries Application Pattern Generator wizard is a rapid application development (RAD) tool which supports the development of end-to-end Web applications. It is based on non-proprietary Eclipse technology. You can access the Eclipse web site at http://www.eclipse.org/ for more information about Eclipse.
The objective of this wizard is to keep application development as simple as possible. Therefore, you are required to make a minimum number of decisions, as many assumptions are made based on a selected pattern.

A pattern acts as a template of the Web page(s) you wish to generate. In composing an application model from a pattern, you define the data presentation, data access and navigation aspects of your application. A pattern allows you to make certain actions available to the user, such as data entry, selection, editing, and deletion.
In the zSeries Application Pattern Generator, you can create a link between patterns using extract criteria. For example, one pattern could contain a list of employees which can be selected by surname, and a second pattern could use the same list but allow selection by department.

The full list of zSeries Application Pattern Generator patterns is listed in the Patterns topic in this document.
The zSeries Application Pattern Generator tool allows users with little or no experience of Web application development to build applications using an easy-to-follow wizard. To do this, the wizard helps you specify instances of a programming model (also known as an application model), including data source, user interface and application flow, without any prior knowledge of this model.

A zSeries Application Pattern Generator-generated application can be saved and subsequently modified. In other words, the zSeries Application Pattern Generator wizard allows for a BACK move even after you have pressed the Finish button. This is made possible by the fact that when a pattern, associated with a data source, is generated, it is saved in such a way that you can return to its specifications, also called the application model.

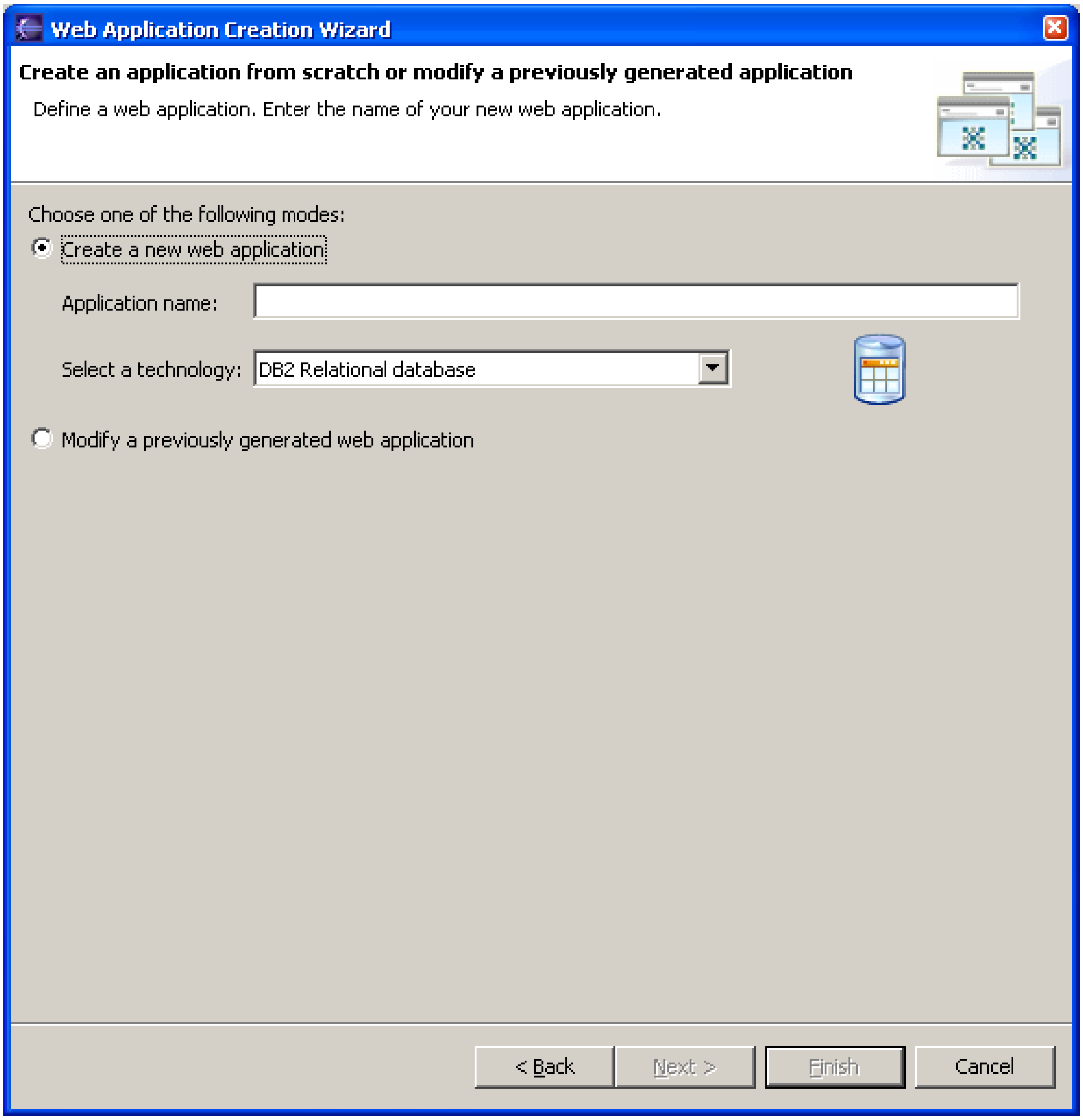
When you create a new Web application, you have a choice of three technologies to supply the data for your Web application.
Your application accesses and presents this data according to the selected pattern.

zSeries Application Pattern Generator consists of five pages: Select Mode, Select Pattern, Define Model, Define Layouts and Finish.

1. **Select Mode (page 1)**
   This step of the wizard allows you to select a mode to either create a new Web application or modify an existing one. If you choose the first mode, you must enter a name for your application and choose a data source technology.
2. **Select Pattern (page 2)**
   This step of the wizard allows you to select the pattern upon which the generation of your web application will be based. A pattern acts as a template for the web application you wish to generate.
3. **Define Model (page 3)**
   This step of the wizard allows you to select the data for your application. The data type depends on the technology chosen on page 1.
4. **Define Layouts (page 4)**
   This step of the wizard defines the layout of each page of your web application. The number of pages in this step corresponds to the number of pages in the pattern selected.
5. **Finish (page 5)**
   In the last step of the wizard, you define the destination project, logic package, data package and generator of your application.

Select Mode and Technology

Below is an image of page 1 of the zSeries Application Pattern Generator wizard. On this page, you select the wizard mode and, if you choose the first mode, data source technology.



Create an application from scratch or modify a previously generated application

Define a web application. Enter the name of your new web application.

Choose one of the following modes:

● Create a new web application

Application name:

Select a technology: DB2 Relational database

○ Modify a previously generated web application

zSeries Application Pattern Generator offers two modes: *Modify a previously generated web application* or *Create a new web application*.

Modify a previously generated Web application

This function allows you to make changes to your Web application after generation.
Note: You can only modify an application that was created using zSeries Application Pattern Generator.

To modify an application:

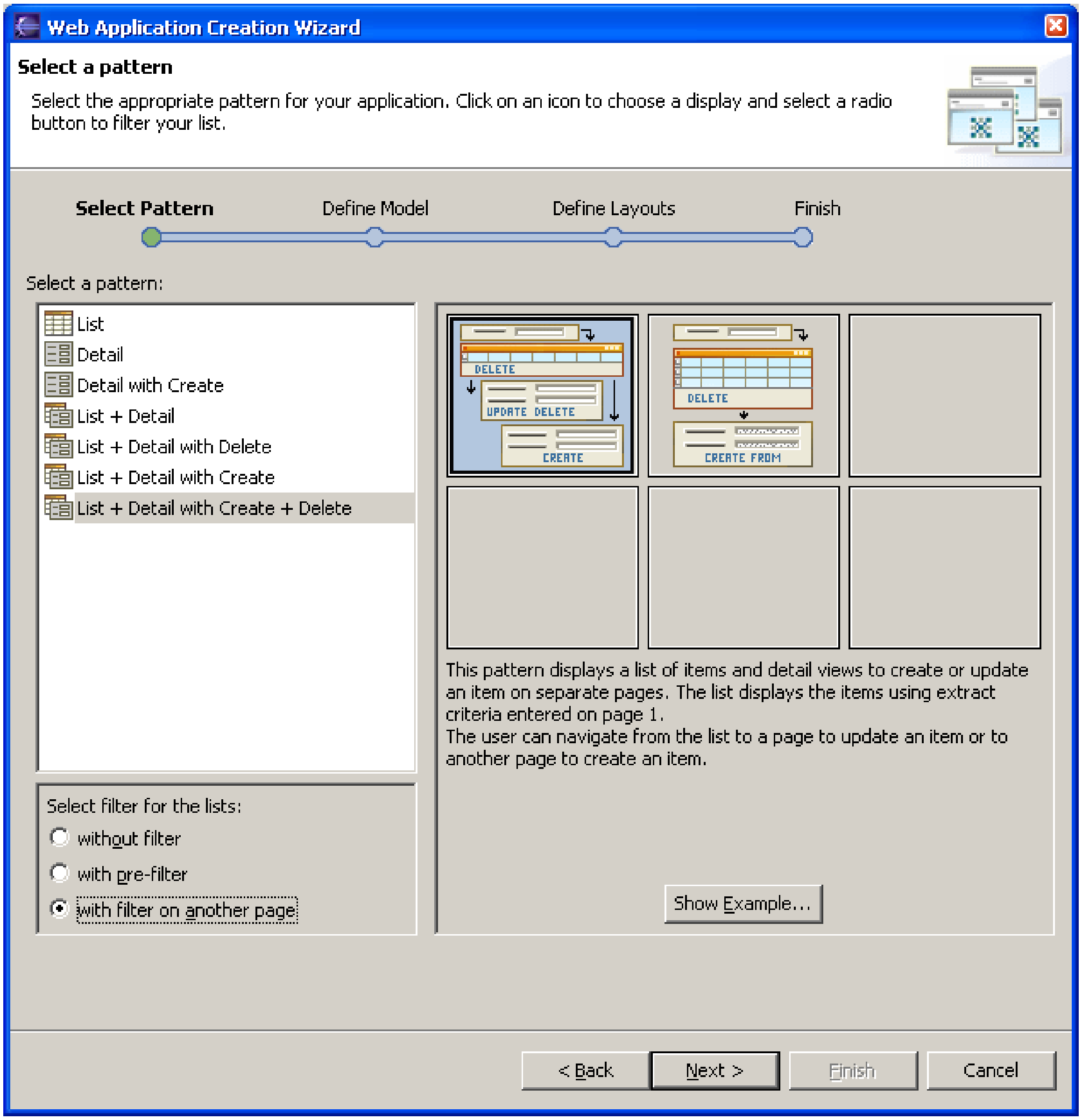
1. Select *Modify a previously generated application*.
2. Click *Browse* to access the zSeries Application Pattern Generator project and open the .icxmi file. A graphical representation and a short description of the pattern associated to the metadata appear.
3. If you are satisfied that this is the metadata you want to modify, click the Next button to continue to the following page of the wizard. Otherwise, click Browse again to choose a different metadata.

Create a new Web application

1. Select *Create a new web application*.
2. Enter a name for your Web application.
   This name will constitute a package in the zSeries Application Pattern Generator project. It must comply with Java naming rules. It must be unique in order to not overwrite previously-saved files. If this name is incorrect or empty, an error message is displayed.
3. There is currently only one technology you can choose to use for data access.
   - DB2 Relational database: this option uses a database with tables, columns, and key fields on DB2 databases residing on your z/OS server.

Introduction to the Select Pattern page

This is an image of page 2 of the zSeries Application Pattern Generator wizard:



Web Application Creation Wizard

Select a pattern

Select the appropriate pattern for your application. Click on an icon to choose a display and select a radio button to filter your list.

Select Pattern — Define Model — Define Layouts — Finish

Select a pattern:

- List
- Detail
- Detail with Create
- List + Detail
- List + Detail with Delete
- List + Detail with Create
- List + Detail with Create + Delete

Select filter for the lists:

○ without filter

○ with pre-filter

● with filter on another page

This pattern displays a list of items and detail views to create or update an item on separate pages. The list displays the items using extract criteria entered on page 1.
The user can navigate from the list to a page to update an item or to another page to create an item.

This step of the wizard allows you to select the pattern upon which the generation of your web application will be based. A pattern acts as a template for the web application you wish to generate.

All templates proposed by the wizard automatically cover the data presentation, data access, and navigation aspects of your web application.

When choosing your pattern, you should consider your plans for your Web application.

To help you make this decision, you can view the graphic representation of each pattern supported by the wizard. You can also ask to visualize a corresponding mockup finished Web application by selecting the *Show Example* button.

Choose Pattern

In this step of the zSeries Application Pattern Generator wizard you select a pattern on which your application will be based.

1. Choose a pattern type from the list.
2. There are a number of variants of each pattern type. Each variant is visually presented. Select the suitable variant by a simple click.
   Hint : To help you make this decision, click the *Show Example* button to view a non-interactive mockup of an application based on the chosen pattern.

Patterns

zSeries Application Pattern Generator's patterns are all-purpose; they provide for both list and detail types of data presentation, on one or more Web pages. They depend on data from one data set.

- **List**
- **Detail**
- **Detail with Create**
- **List and Detail**
- **List and Detail + Delete**
- **List and Detail + Create**
- **List and Detail + Create + Delete**

All of these pattern types provide for a choice of template variants.
Patterns provide for standard actions, such as Select, Create, and Delete. The choice of actions available varies according to the selected pattern type and variant.
In the final Web application, actions are generated code for data access and are sometimes represented by a button.

NOTE: With all pattern variants that include extract criteria (whether hidden or not), therefore including a Select operation, you will need to specify which extract fields are being used. You do this on the next zSeries Application Pattern Generator page.

For more information on each of the pattern types, see the following topics.

List

An application generated using this pattern type displays data in a list format, for example showing a list of employees.
Several actions are available:

- **Select** is the action that populates the list. This action is required and implicitly called when displaying the list.
- **Delete** allows you to check on several rows of the list and delete them. This action is optional. If you select it, then a check box will be displayed opposite each list item. When the user checks one or more of these boxes and presses the Delete button, the corresponding data is deleted.
- **Extract** is available if the pattern defines a separate extraction page. It adds a hyperlink to navigate back to the page. This action, when available, is required.

zSeries Application Pattern Generator allows you to define lists with extract criteria in three ways :

1. List (without extract criteria)
2. List (with hidden extract criteria)
3. List (with extract criteria on another page)

List (without extract criteria)

An application created using this pattern type has all the characteristics of the List pattern type.

The two model variants for the 'List (without extract criteria)' pattern type are:

1. **List + Delete**
   This pattern displays a list of items on one page. The user can select items from the list to delete them.
2. **List**
   This pattern displays a list of items on one page. The user can view the items of the list.

Click the *Show Example* button to view a mockup non-interactive version of an application based on these pattern variants.

List (with hidden criteria)

An application created using this pattern type has all the characteristics of the List pattern type, plus a filter function.

This function materializes as extract criteria fields which, in the two patterns below, are invisible to the Web application user (hence 'hidden extract criteria'). You will have to complete the corresponding generated EGL code in order to set the extract criteria with the appropriate values.

NOTE: Hidden extract criteria are useful when you intend to link several patterns. The second pattern may be based on hidden extract criteria which you set from data of your first pattern. For example, one pattern could contain a list of employees which can be selected by surname, and a second pattern could use the same list but allow selection by department.

The two model variants for the 'List (with hidden criteria)' pattern type are:

1. **List + Delete**
   This pattern displays a list of items on one page. The list displays the items using hidden extract criteria. The user can select items from the list to delete them.
2. **List**
   This pattern displays a list of items on one page. The list displays the items using hidden extract criteria. The user can view the items of the list.

Click the *Show Example* button to view a mockup non-interactive version of an application based on these pattern variants.

List (with extract criteria on another page)

An application created using this pattern type has all the characteristics of the List pattern type, plus a filter function.

In the Web application, this function materializes to the user as displayed extract criteria fields in which he must enter criteria for extraction from the list. Unlike the 'List (with extract criteria on same page)' pattern type, the extract criteria fields appear on a separate page.
The two model variants for the 'List (with extract criteria on another page)' pattern type are:

1. **List + Delete**
   This pattern displays a list of items on one page. The list displays the items using the extract criteria entered on a previous page. The user can select items from the list to delete them.

2. **List**
   This pattern displays a list of items on one page. The list displays the items using the extract criteria entered on a previous page. The user can view the items of the list.

Click the *Show Example* button to view a mockup non-interactive version of an application based on these pattern variants.

Detail

An application generated using this pattern type displays data with a detail presentation, on one page, for example showing an employee's first name, last name, job, and salary.
According to the selected variant, you can choose to include the **Update** and/or the **Delete** actions.
For example, you can choose this pattern to allow a member of the Personnel Department to change an existing employee's last name or salary, or delete an employee who has left the company.
Alternatively, by offering the user none of these actions, you can make this information available in a read-only form, for example, allowing an employee to verify his personal information but not to change it.
The four pattern variants for the 'Detail' pattern type are:

1. **Detail for update/delete on one page**
   This pattern displays an item on one page. The user can read an item then update it or delete it.
2. **Detail for update on one page**
   This pattern displays an item on one page. The user can read an item then update it.
3. **Detail for delete on one page**
   This pattern displays an item on one page. The user can read an item then view it or delete it.
4. **Detail read-only on one page**
   This pattern displays an item on one page. The user can only view it.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

Detail with Create

An application generated using this pattern type displays data with a detail

presentation, on one page, for example showing an employee's first name, last name, job, and salary.
All the variants of this pattern include the **Create** action. You can choose to include the **Update** and/or the **Delete** actions.
For example, you can choose this pattern to allow a member of the Personnel Department to read an employee's detail, enter detailed information on a new employee, change an existing employee's last name or salary, or delete an employee who has left the company.
The five pattern variants for the 'Detail with Create' pattern type are:

1. **Detail for create/update/delete on one page**
   This pattern displays an item on one page. The user can create an item or read an existing item and then update it or delete it.
2. **Detail for create/update on one page**
   This pattern displays an item on one page. The user can create an item or read an existing item and then view it or update it.
3. **Detail for create/delete on one page**
   This pattern displays an item on one page. The user can create an item or read an existing item and then view it or delete it.

4. **Detail for 'create from' on one page**
   This pattern displays one page on which the user can create an item from data.
5. **Detail for create on one page**
   This pattern displays one page on which the user can create an item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail

An application generated using this pattern type displays data in list format on one page and allows the user to select one item in the list to display additional information on this item on the detail view/page.
For the list, several operations are available:

- **Select** is the action that populates the list. This action is required and implicitly called when displaying the list.
- **Extract** is available if the pattern defines a separate extraction page. It adds a hyperlink to navigate back to the page. This action, when available, is required.

- A link is automatically added to each item in the first column of the list. Clicking on a link will display the detail view/page filled with the data of the selected item.

zSeries Application Pattern Generator allows you to define lists with extract criteria in three ways :

1. List and Detail (without extract criteria)
2. List and Detail (with hidden extract criteria)
3. List and Detail (with extract criteria on another page)

List and Detail (without extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail pattern type.

The two model variants for the 'List and Detail (without extract criteria)' pattern type are:

1. **List and Detail on separate pages**
   This pattern displays a list of items and detail view of an item. The user can select an item from the list and navigate to the detail page to update the item.
2. **List and Detail read-only on separate pages**
   This pattern displays a list of items and a read-only detail view of an item. The user can select an item from the list and navigate to the detail page to view the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail (with hidden extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail pattern type, plus a filter function.

This function materializes as extract criteria fields which, in the two patterns below, are invisible to the Web application user (hence 'hidden extract criteria'). You will have to complete the corresponding generated EGL code in order to set the extract criteria with the appropriate values.

NOTE: Hidden extract criteria are useful when you intend to link several patterns. The second pattern may be based on hidden extract criteria which you set from data of your first pattern. For example, one pattern could contain a list of employees which can be selected by surname, and a second pattern could use the same list but allow selection by department.

The model variants of the 'List and Detail (with hidden extract criteria)' pattern type are:

1. **List and Detail on separate pages**
   This pattern displays a list of items and detail view of an item. The list displays the items using hidden extract criteria. The user can select an item from the list and navigate to the detail page to update the item.
2. **List and Detail read-only on separate pages**
   This pattern displays a list of items and a read-only detail view of an item. The list displays the items using hidden extract criteria. The user can select an item from the list and navigate to the detail page to view the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail (with extract criteria on another page)

An application created using this pattern type has all the characteristics of the List and Detail pattern type, plus a filter function.

In the Web application, this function materializes to the user as displayed extract criteria fields in which he must enter criteria for extraction from the list. Unlike the 'List and Detail (with extract criteria on same page)' pattern type, the extract criteria fields appear on a separate page.
The two model variants of the 'List and Detail (with extract criteria on another page)' pattern type are:

1. **Extract criteria on page 1. List on page 2. Detail on page 3**
   This pattern displays a list of items and detail view of an item. The list displays the items using extract criteria entered on page 1. The user can select an item from the list and navigate to the detail page to update the item.
2. **Extract criteria on page 1. List on page 2. Detail read-only on page 3**
   This pattern displays a list of items and a read-only detail view of an item. The list displays the items using extract criteria entered on page 1. The user can select an item from the list and navigate to the detail page to view the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Delete

An application generated using this pattern type displays data in list format on one page and allows the user to select one item in the list to display additional information on this item on the detail view/page.
For the list, several operations are available:

- **Select** is the action that populates the list. This action is required and implicitly called when displaying the list.
- **Delete** allows you to check on several rows of the list and delete them. This action is optional. If you select it, then a check box will be displayed opposite each list item. When the user checks one or more of these boxes and presses the Delete button, the corresponding data is deleted.
- **Extract** is available if the pattern defines a separate extraction page. It adds a hyperlink to navigate back to the page. This action, when available, is required.
- A link is automatically added to each item in the first column of the list. Clicking on a link will display the detail view/page filled with the data of the selected item.

zSeries Application Pattern Generator allows you to define lists with extract criteria in three ways :

1. List and Detail + Delete (without extract criteria)
2. List and Detail + Delete (with hidden extract criteria)
3. List and Detail + Delete (with extract criteria on another page)

List and Detail + Delete (without extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Delete pattern type.
The two model variants for the 'List and Detail + Delete (without extract criteria)' pattern type are:

1. **List and Detail on separate pages**
   This pattern displays a list of items and detail view of an item. The user can select an item from the list to delete it or navigate to the detail page to update or delete the item.

2. **List and Detail read-only on separate pages**
   This pattern displays a list of items and a read-only detail view of an item. The user can select an item from the list to delete it or navigate to the detail page to view or delete the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Delete (with hidden extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Delete pattern type, plus a filter function.

This function materializes as extract criteria fields which, in the two patterns below, are invisible to the Web application user (hence 'hidden extract criteria'). You will have to complete the corresponding generated EGL code in order to set the extract criteria with the appropriate values.

NOTE: Hidden extract criteria are useful when you intend to link several patterns. The second pattern may be based on hidden extract criteria which you set from data of your first pattern. For example, one pattern could contain a list of employees which can be selected by surname, and a second pattern could use the same list but allow selection by department.

The two model variants of the 'List and Detail + Delete (with hidden extract criteria)' pattern type are:

1. **List and Detail on separate pages**
   This pattern displays a list of items and detail view of an item. The list displays the items using hidden extract criteria. The user can select an item from the list to delete it or navigate to the detail page to update or delete the item.
2. **List and Detail read-only on separate pages**
   This pattern displays a list of items and a read-only detail view of an item. The list displays the items using hidden extract criteria. The user can select an item from the list to delete it or navigate to the detail page to view or delete the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Delete (with extract criteria on another page)

An application created using this pattern type has all the characteristics of the List and Detail + Delete pattern type, plus a filter function.
In the Web application, this function materializes to the user as displayed extract criteria fields in which he must enter criteria for extraction from the list. Unlike the 'List and Detail + Delete (with extract criteria on same page)' pattern type, the extract criteria fields appear on a separate page.
The two model variants of the 'List and Detail + Delete (with extract criteria on another page)' pattern type are:

1. **Extract criteria on page 1. List on page 2. Detail on page 3**
   This pattern displays a list of items and detail view of an item. The list displays the items using extract criteria entered on page 1. The user can select an item from the list to delete it or navigate to the detail page to update or delete the item.
2. **Extract criteria on page 1. List on page 2. Detail read-only on page 3**
   This pattern displays a list of items and a read-only detail view of an item. The list displays the items using extract criteria entered on page 1. The user can select an item from the list to delete it or navigate to the detail page to view or delete the item.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create

An application generated using this pattern type displays data in list format on one page and allows the user to select one item in the list to display additional information on this item.
You can choose to include **Select**, **Create** and **Update** actions, allowing, for instance, a member of the Personnel Department to create a new employee.
Two variants include a '**Create from**' button. When users displays detail information on an item in a list, this button allows them to create a new item based on the selected item. Clicking on this button opens the list of fields associated with the item which the user can modify or reuse to create a new item. You must define a new key field for the new item.
zSeries Application Pattern Generator allows you to define lists with extract criteria in three ways :

1. List and Detail + Create (without extract criteria)
2. List and Detail + Create (with hidden extract criteria)
3. List and Detail + Create (with extract criteria on another page)

List and Detail + Create (without extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Create pattern type.
The two model variants for the 'List and Detail + Create (without extract criteria)' pattern type are:

1. **List on page 1. Update detail on page 2. Create detail on page 3**
   This pattern displays a list of items and detail views to create or update an item on separate pages. The user can navigate from the list to a page to update an item or to another page to create an item.
2. **List on page 1. Detail for 'create from' data on page 2**
   This pattern displays a list of items and a detail page to create an item using data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create (with hidden extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Create pattern type, plus a filter function.

This function materializes as extract criteria fields which, in the two variants below, are invisible to the Web application user. You will have to complete the corresponding generated EGL code in order to set the appropriate values to the extract criteria.

NOTE: Hidden extract criteria are useful when you intend to link several patterns. The second pattern may be based on hidden extract criteria which you set from data of your first pattern. For example, one pattern could contain a list of employees which can be selected by surname, and a second pattern could use the same list but allow selection by department.

The two model variants of the 'List and Detail + Create (with hidden extract criteria)' pattern type are:

1. **List on page 1. Update detail on page 2. Create detail on page 3**
   This pattern displays a list of items and detail views to create or update an item on separate pages. The list displays the items using hidden extract criteria. The user can navigate from the list to a page to update an item or to another page to create an item.

2. **List on page 1. Detail for 'create from' data on page 2**
   This pattern displays a list of items with hidden extract criteria and a detail page to create an item using data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create (with extract criteria on another page)

An application created using this pattern type has all the characteristics of the List and Detail + Create pattern type, plus a filter function.
In the Web application, this function materializes to the user as displayed extract criteria fields in which he must enter criteria for extraction from the list. Unlike the 'List and Detail + Create (with extract criteria on same page)' pattern type, the extract criteria fields are on a separate page.

The two model variants of the 'List and Detail + Create (with extract criteria on another page)' pattern type are:

1. **Extract criteria on page 1. List on page 2. Update detail on page 3. Create detail on page 4**
   This pattern displays a list of items and a detail views to create or update an item on separate pages. The list displays the items using extract criteria entered on page 1. The user can navigate from the list to a page to update an item or to another page to create an item.
2. **Extract criteria on page 1. List on page 2. Detail for 'create from' data on page 3**
   This pattern displays a list of items and detail page to create an item using data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create + Delete

An application generated using this pattern type displays data in list format on one page and allows the user to select one item in the list to display additional information on this item.

You can choose to include **Select**, **Delete**, **Create** and **Update** actions, allowing, for instance, a member of the Personnel Department to create a new employee or to delete an employee who has left the company.
Two variants below include a '**Create from**' button. When users display detail information on an item in a list, this button allows them to create a new item based on the selected item. Clicking on this button opens the list of fields associated with the item which the user can modify or reuse to create a new item. You must define a new key field for the new item.
zSeries Application Pattern Generator allows you to define lists with extract criteria in three ways :

1. List and Detail + Create + Delete (without extract criteria)
2. List and Detail + Create + Delete (with hidden extract criteria)
3. List and Detail + Create + Delete (with extract criteria on another page)

List and Detail + Create + Delete (without extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Create + Delete pattern type.
The two model variants for the 'List and Detail + Create + Delete (without extract criteria)' pattern type are:

1. **List on page 1. Update detail on page 2. Create detail on page 3**
   This pattern displays a list of items and detail views to create or update an item on separate pages. The user can navigate from the list to a page to update or delete an item or to another page to create an item.
2. **List on page 1. Detail for 'create from' data on page 2**
   This pattern displays a list of items and a detail page to create an item using data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create + Delete (with hidden extract criteria)

An application created using this pattern type has all the characteristics of the List and Detail + Create + Delete pattern type, plus a filter function.
This function materializes as extract criteria fields which, in the two variants below, are invisible to the Web application user. You will have to complete the corresponding generated EGL code in order to set the appropriate values to the

extract criteria.

NOTE: Hidden extract criteria are useful when you intend to link several patterns. The second pattern may be based on hidden extract criteria which you set from data of your first pattern. For example, one pattern could contain a list of employees which can be selected by surname and a second pattern could use the same list but allow selection by department.

The two model variants of the 'List and Detail + Create + Delete (with hidden extract criteria)' pattern type are:

1. **List on page 1. Update detail on page 2. Create detail on page 3**
   This pattern displays a list of items and detail views to create or update an item on separate pages. The list displays the items using hidden extract criteria. The user can navigate from the list to a page to update or delete an item or to another page to create an item.
2. **List on page 1. Detail for 'create from' data on page 2**
   This pattern displays a list of items with hidden extract criteria and a detail page to create an item using data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

List and Detail + Create + Delete (with extract criteria on another page)

An application created using this pattern type has all the characteristics of the List and Detail + Create + Delete pattern type, plus a filter function.
In the Web application, this function materializes to the user as displayed extract criteria fields in which he must enter criteria for extraction from the list. Unlike the 'List and Detail + Create + Delete (with extract criteria on same page)' pattern type, the extract criteria fields are on a separate page.

The two model variants of the 'List and Detail + Create + Delete (with extract criteria on another page)' pattern type are:

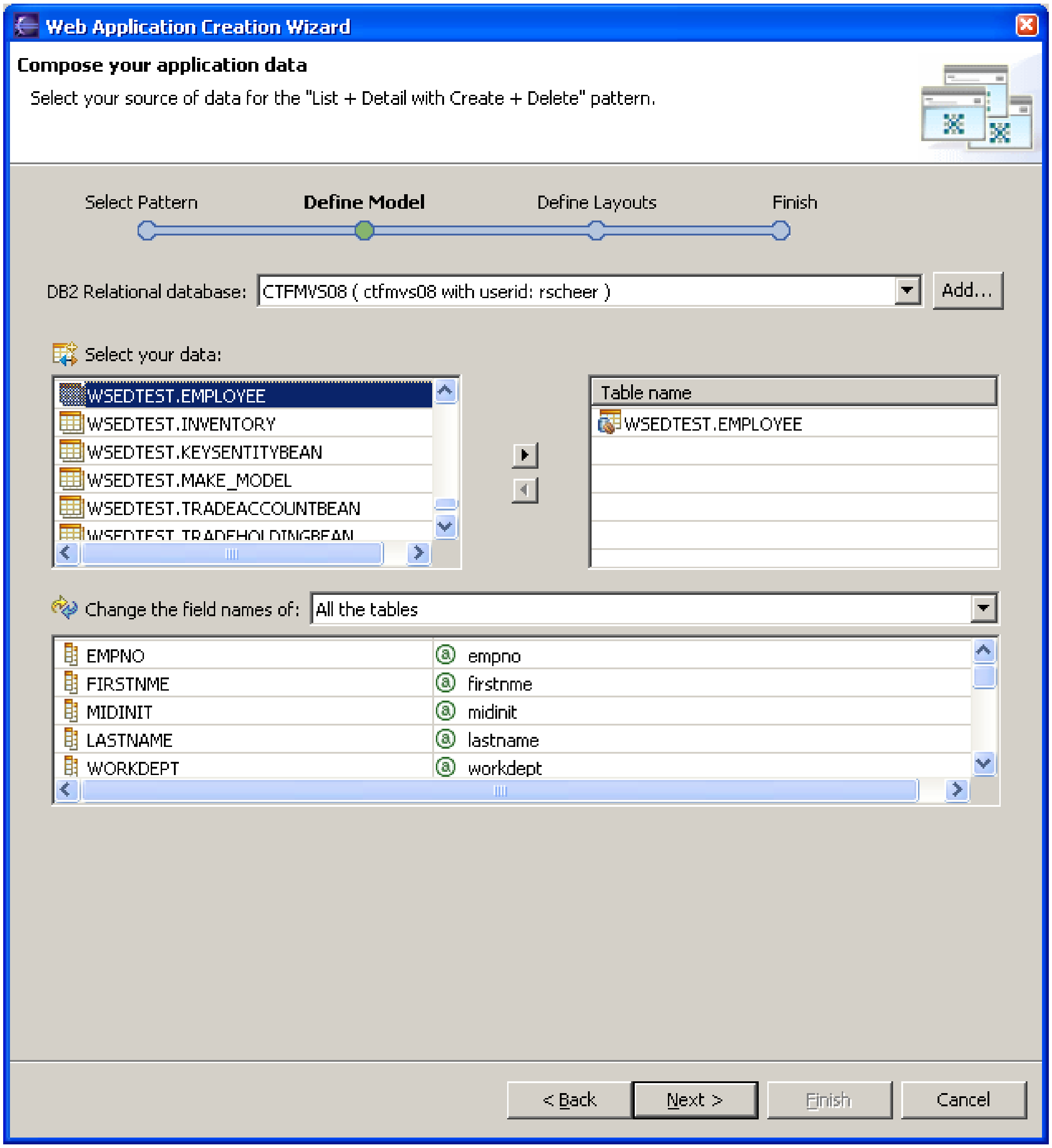
1. **Extract criteria on page 1. List on page 2. Update detail on page 3. Create detail on page 4**
   This pattern displays a list of items and a detail views to create or update an item on separate pages. The list displays the items using extract criteria entered on page 1. The user can navigate from the list to a page to update or delete an item or to another page to create an item.
2. **Extract criteria on page 1. List on page 2. Detail for 'create from' data on page 3**
   This pattern displays a list of items and detail page to create an item using

data from fields which are filled by default. The user can also enter his own data.

Click the *Show Example* button to view a mockup non-interactive version of an application based on each of these pattern variants.

Introduction to the *Define Model* page

This is an image of page 3 of the zSeries Application Pattern Generator wizard that appears when you have chosen Relational Database as the technology on page 1:



Compose your application data

Select your source of data for the "List + Detail with Create + Delete" pattern.

DB2 Relational database: CTFMVS08 (ctfmvs08 with userid: rscheer)

Select your data:

WSEDTEST.EMPLOYEE
WSEDTEST.INVENTORY
WSEDTEST.KEYSENTITYBEAN
WSEDTEST.MAKE_MODEL
WSEDTEST.TRADEACCOUNTBEAN
WSEDTEST.TRADEHOLDINGBEAN

Table name
WSEDTEST.EMPLOYEE

Change the field names of: All the tables

EMPNO	empno
FIRSTNME	firstnme
MIDINIT	midinit
LASTNAME	lastname
WORKDEPT	workdept

In the previous zSeries Application Pattern Generator page, you chose the pattern for your Web application.

This zSeries Application Pattern Generator page has two parts. The first part allows you to:

- select the data for your application by selecting the database and its table(s),
- rename fields to improve generated code readability. Modified names are used as host variables in SQL orders whenever relevant. They are also used as new defaults in the application layout.

The second part allows you to:

- select the key fields for your application,
- specify the extract fields involved in the *Select* operation,
- edit the SQL of the operations.

As a general rule, data managed in an application based on a zSeries Application Pattern Generator pattern is stored in only one table. However, multi-table mapping is possible and requires SQL editing via the *Edit SQL* button on the second part of this page.

Select Data Source

You must now select the data source for your application.

1. You can select a database from a list of available databases to which you have already connected. The database will provide the information content for your application.
   Data source selection is dynamic, so the list of the tables in this database automatically appears under *Select your data*.

   NOTE: If you are connecting to a database for the first time, click the *Add* button; a dialog box opens in which you enter your User ID and password for this database connection.

Select Data

Now that you have selected the database for your Web application, the list of tables in this database appears under *Select your data***.**

The next task in this step of the wizard is to select the tables you wish to include in your application. Optionally, you can also rename the field.

1. To select table(s) in the list, click the table name(s) and then the right-pointing arrow.
   The name(s) of the selected table(s) appear in the *Table name* column.

2. To display all fields of all tables you have selected, select 'All the tables' in the *Change the field names of* drop-down list. If you want to display the fields of a particular table, select the table in the list.

3. If you wish to change a field name, click once on the field name to select it and again to make the cursor appear. Enter the name change.

Select Key and Extract Fields

In the first part of this page, you selected the tables and fields for your Web application. As a result, the field(s) of the **first** selected table appear in the *Define your Key field(s)* column in the second part.

1. Select the key fields to include in your application.
   - To **define your own key fields**, in the *Define your Key field(s)* column, select a key field (you can also select more than one at the same time) to include. Click the right-pointing arrow. The key field appears in the *Key fields* column.
   - To remove a key field, select it in the *Key fields* column and click the left-pointing arrow.

     Important: At least one key field is required.

2. Select the extract fields for your application

   NOTE: You can only carry out this step if the pattern you selected provides for extract criteria and if you included a Select action.
   - To define the extract fields, in the *Choose the extract fields* column, select a field (you can also select more than one at the same time) and click the right-pointing arrow. The field appears in the Extract field column, with its Type.

3. Edit actions.

   Select an action and click the *Edit the SQL* button to edit it.

   For help on editing SQL, see the Edit Operations topic.

Edit Operations

When you have selected the database, tables, and key fields for your application, the *Edit Actions* table shows all actions which will be available to the user of your application.

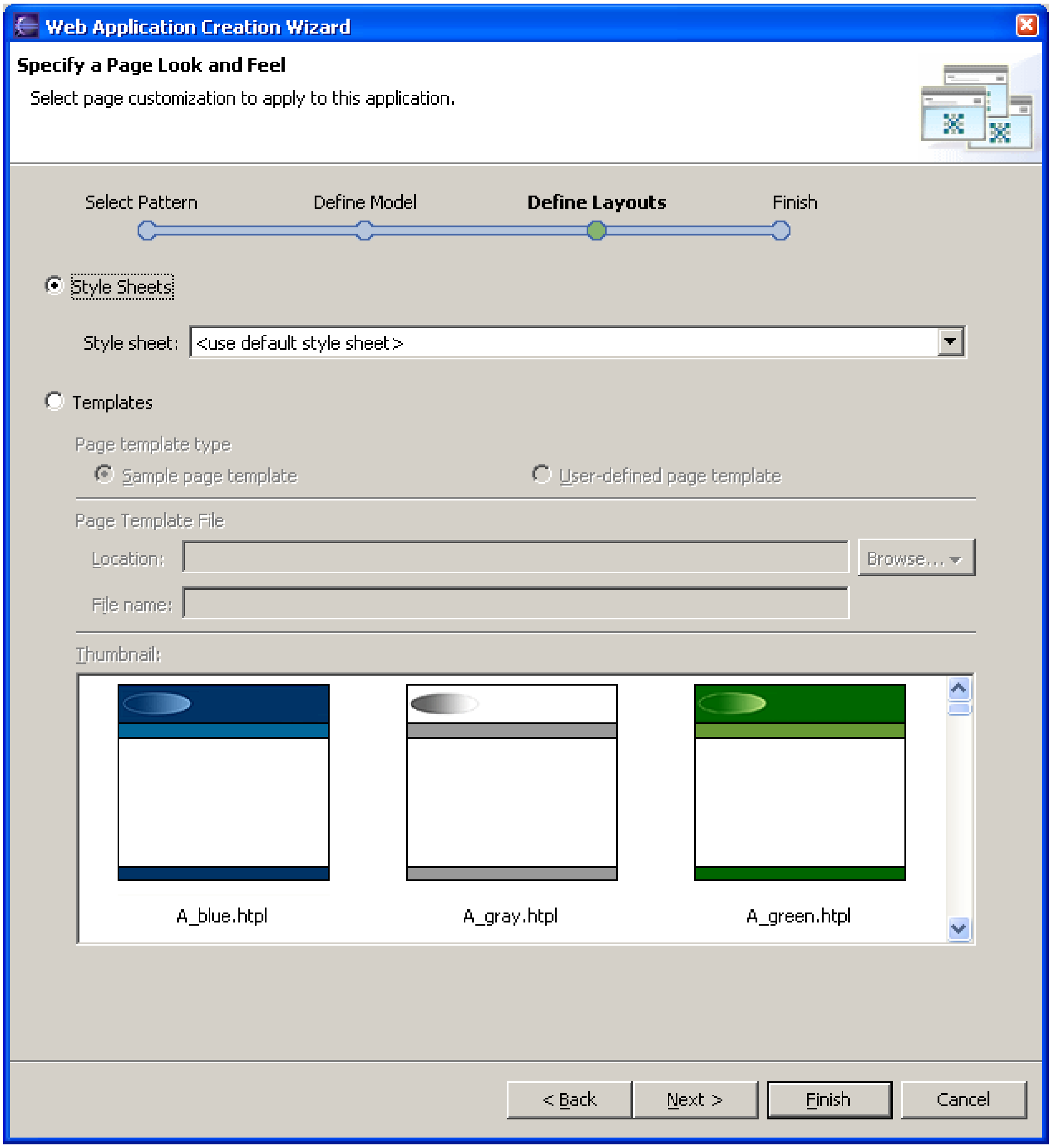
The contents of this list depend on the pattern variant selected on page 1. From this list, you can edit the SQL operations. This is necessary to set up multi-table mapping.

1. Select the operation for which you wish to edit the SQL.
2. Click the *Edit SQL* button to open the *Work with the SQL statement* window.
3. Edit the SQL.
   SQL column names and their corresponding Host variables names are displayed.
   You can execute, parse, and reset the current SQL order.
4. To edit the SQL of another operation, select the operation in the drop-down list .
5. Click OK to return to the wizard.

WARNING: Changes made here pertain to the corresponding operation and will be implemented for **all corresponding actions** throughout your Web application.

Introduction to the *Look and Feel* page

This is an image of page 4 of the zSeries Application Pattern Generator wizard:



Web Application Creation Wizard

Specify a Page Look and Feel

Select page customization to apply to this application.

● Style Sheets

Style sheet: <use default style sheet>

○ Templates

Page template type

● Sample page template ○ User-defined page template

Page Template File

Location:

File name:

Thumbnail:

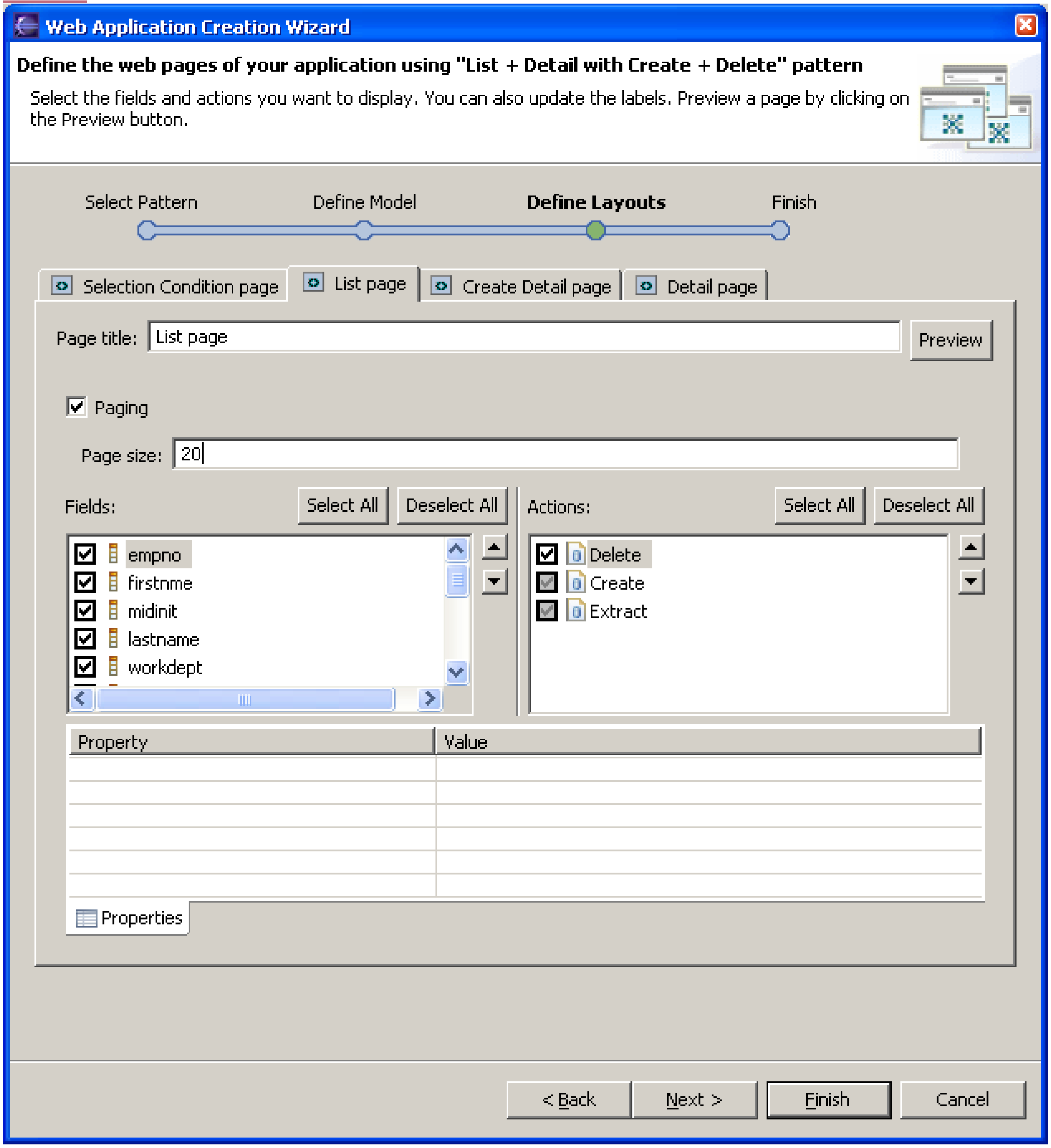
In pages 2 and 3 of zSeries Application Pattern Generator, you have chosen your application pattern and defined its data content, respectively.

This fourth zSeries Application Pattern Generator page allows you to:

- define page background color, style, etc.
  - Style sheets - you can use your own style sheet previously saved as a **.css** file in the workbench or use the default style sheet proposed by zSeries Application Pattern Generator.
  - Templates – you can also choose from a set of predefined templates or browse for a previously saved template in the file system.

Introduction to the *Define Layouts* page

This is an image of page 4 (part 2) of the zSeries Application Pattern Generator wizard:



Web Application Creation Wizard

Define the web pages of your application using "List + Detail with Create + Delete" pattern

Select the fields and actions you want to display. You can also update the labels. Preview a page by clicking on the Preview button.

Page title: List page

☑ Paging

Page size: 20

Fields:

☑ empno
☑ firstnme
☑ midinit
☑ lastname
☑ workdept

Actions:

☑ Delete
☑ Create
☑ Extract

Property	Value

In pages 2 and 3 of zSeries Application Pattern Generator, you have chosen your application pattern and defined its data content, respectively.

This second part of the fourth zSeries Application Pattern Generator page allows you to:

- give a title (the wizard proposes a default title) to each page of your application,
  NOTE: There is one layout tab for each page defined by the selected application pattern.
- define the layout of each page of your web application,
- visualize a dynamic preview of your application page with its current layout characteristics.

Aspects of the layout which you can define are:

- selection of the fields and actions to be displayed in the page/view,
- relative field/action positions in the page/view,
- field labels and field display types in the page/view,
- action button labels in the page/view.

Page Layout

This step of the zSeries Application Pattern Generator wizard allows you to customize the layout of each page of your web application.
NOTE: There is one layout tab for each page defined by the selected application pattern.

Selection of the table fields and actions to be displayed

Fields and actions are displayed in two columns.

- **Field Selection**

  Fields listed belong to the tables you have previously selected in the *Define Model* page. By default, all fields are selected; they will appear in the preview and in your finished application.

  WARNING: When an extraction is provided by the selected pattern, you must have defined the Extract field(s) in the *Define Model* page. As a result, the checkbox opposite each field name is checked. If not, you should go back to this page and specify the extract fields. Otherwise, none of the fields are selected, since they would be displayed empty.

To remove a field, simply uncheck the box next to its name. Fields selected in this list will be displayed in the Web page/view.

- **Action selection**

  Actions listed are automatically provided by the selected pattern. Some actions are required (selected and grayed checkbox) and some are optional.

  An action is different from an operation (see previous zSeries Application Pattern Generator page: *Define Model*) in the sense that it materializes as a button in the generated application. There may be several identical actions throughout your application, but there will be only one corresponding operation, valid for all pages.

  To remove an optional action, clear the box next to its name. Action buttons selected in this list will be displayed in the web page/view.

  Hint: The *All* button selects all fields/actions in their respective list. The *None* button deselects all fields/actions.

- **Paging**

  By default, in list pages, 20 records are read and displayed with each paging process. If you wish to change this number, enter the desired number in the *Page size* field.
  If you do not wish to apply paging to your application, clear this box. As a result, the Web application will read all the table(s) selected contents and display in a continuous list with a scrollbar.

- **Field/action (relative) positions in the page/view**

  To change the order in which the fields/actions appear in your application, in the *Fields* or *Actions list*, select the field/action you want to move and click the *Up* or *Down* arrow.

- **Field labels and field display types**

  Once you have selected the table fields for your page/view, you can edit their labels which will appear in the final application.

  To edit the label of a field, select the field in the *Fields* list and change its default label in the *Property/Value* table.

- **Action button labels**

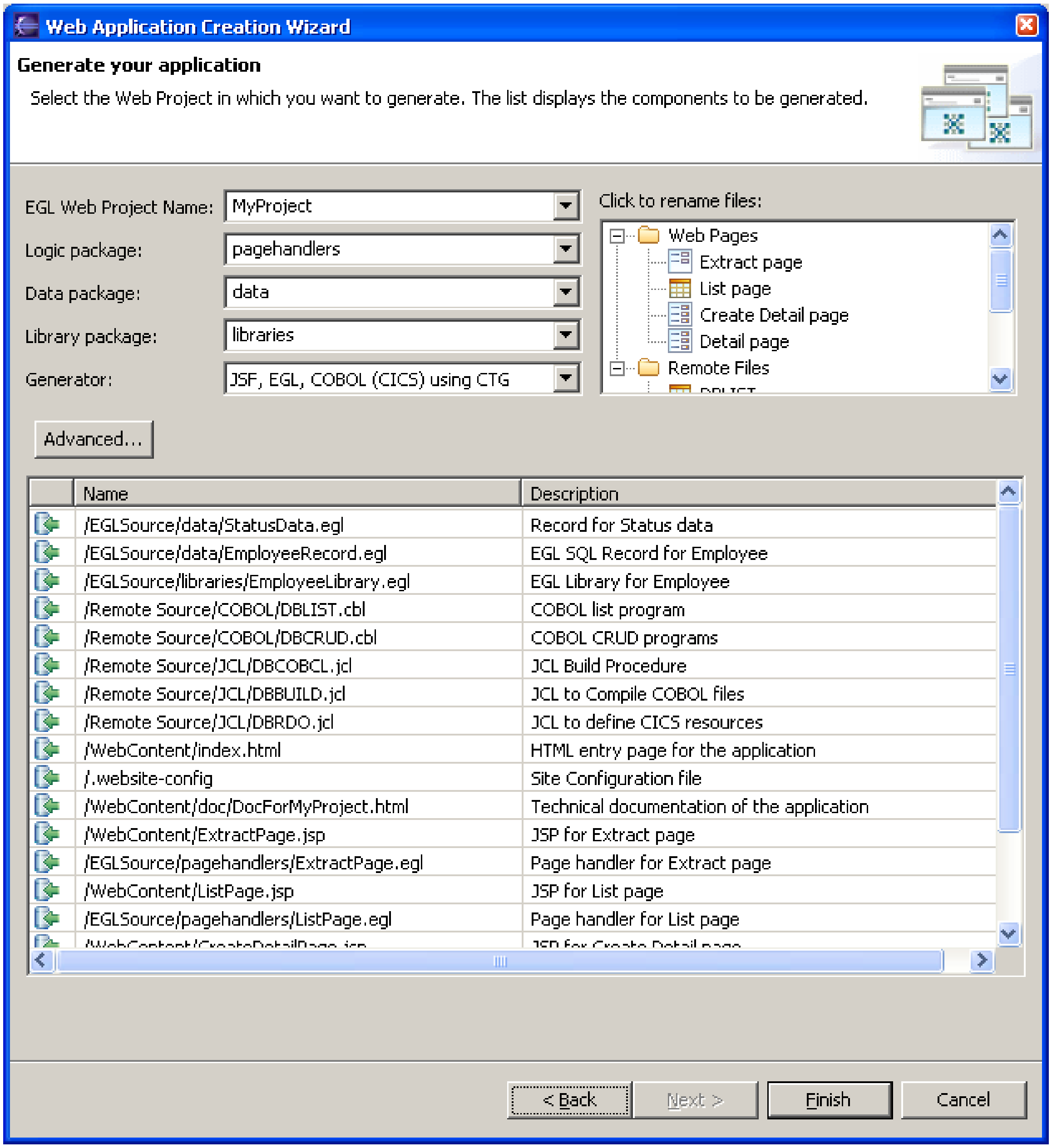
You can edit action button labels which will appear in the final application. To edit a button label, select the associated action in the *Actions* list and change its label in the *Property/Value* table.

Reminder: An action is different from an operation (see previous zSeries Application Pattern Generator page: *Define Model*) in the sense that it is materialized by a button in the generated application. There may be several identical actions throughout your application, but there will be only one corresponding operation, valid for all pages.

To visualize the preview of your application page, click the *Preview* button.

Introduction to the *Finish* page

This is an image of page 5 of the zSeries Application Pattern Generator wizard:



Generate your application

Select the Web Project in which you want to generate. The list displays the components to be generated.

EGL Web Project Name: MyProject

Logic package: pagehandlers

Data package: data

Library package: libraries

Generator: JSF, EGL, COBOL (CICS) using CTG

Click to rename files:

- Web Pages
  - Extract page
  - List page
  - Create Detail page
  - Detail page
- Remote Files
  - DBLIST

Name	Description
/EGLSource/data/StatusData.egl	Record for Status data
/EGLSource/data/EmployeeRecord.egl	EGL SQL Record for Employee
/EGLSource/libraries/EmployeeLibrary.egl	EGL Library for Employee
/Remote Source/COBOL/DBLIST.cbl	COBOL list program
/Remote Source/COBOL/DBCRUD.cbl	COBOL CRUD programs
/Remote Source/JCL/DBCOBCL.jcl	JCL Build Procedure
/Remote Source/JCL/DBBUILD.jcl	JCL to Compile COBOL files
/Remote Source/JCL/DBRDO.jcl	JCL to define CICS resources
/WebContent/index.html	HTML entry page for the application
/.website-config	Site Configuration file
/WebContent/doc/DocForMyProject.html	Technical documentation of the application
/WebContent/ExtractPage.jsp	JSP for Extract page
/EGLSource/pagehandlers/ExtractPage.egl	Page handler for Extract page
/WebContent/ListPage.jsp	JSP for List page
/EGLSource/pagehandlers/ListPage.egl	Page handler for List page
/WebContent/CreateDetailPage.jsp	JSP for Create Detail page

You have now chosen your pattern, defined your data, and composed the layout of your application page(s).
In the *Finish* step of the wizard, you:

- define the destination project of your application, and its logic and data packages,
- visualize the structure and names of the generated components,
- control the status of your future application's components (already existing and replaced, already existing and cumulatively modified, new),
- may rename components,
- launch the generation of your application.

NOTE: You can only generate to already existing EGL Web projects.

A message box will inform you that your application has been successfully generated. However if errors have occurred during the generation process, they are listed in this message box and saved in the .log file, which is automatically generated.

You can then test your application by selecting your project and then 'run on server' in the pop-up menu. Use an existing server or create a new one and click the 'Finish' button. The application server starts, the Web browser is launched, and then the test page is displayed. If your project contains more than one application, these applications are displayed one after the other. For each application, the following are generated:

- a link to launch the application. Note that all the mandatory fields are followed with an asterisk.
- another link to launch the technical documentation which is automatically generated. This documentation (named 'DocFor<*application_name*>.html and located in the 'WebContent' -> 'doc' directory of the project) gives some helpful hints on what to do next in setting up your application.

Generate Application

The purpose of this step of the wizard is to generate your Web application based on the specifications you have defined in the preceding four steps.

1. First, in the drop-down menu Destination project, select the EGL Web project in which you want the generated application to be saved.
   The default destination project name is <*application_name*>.
   If you wish to create a new project folder, type the project name in this field.
   The destination project appears in the workspace.

2. Next, in the Logic package, Data package, and Library package fields, enter the name you wish to give the components, or keep their default names of *pagehandlers, data,* and *libraries*.

3. The Generator field displays the technology to be used to generate your application.

   NOTE: With this zSeries Application Pattern Generator release, *JSF, EGL, and COBOL (CICS) using CTG* generators are available.

4. In the upper-right section of the page, a tree displays the structure and names of the components to be generated. The two main branches are *Web page List* and *Remote List*.
   You can directly enter changes in the names in any of this tree branches. These changes are immediately reflected below in the *Generated Files* table.

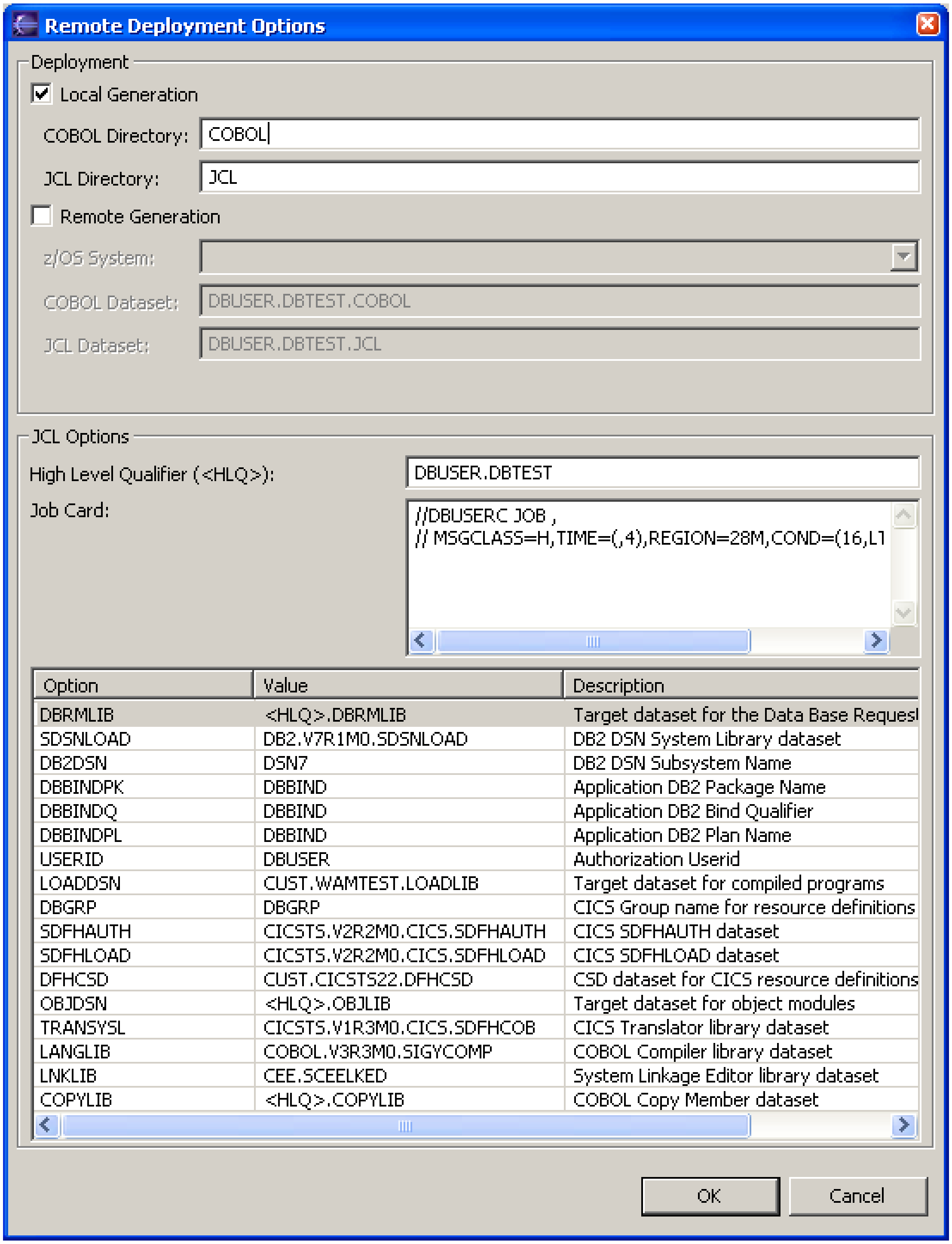
   NOTE: Such changes have no impact on the application interface.

5. The *Advanced* button allows advanced configuration for automatically deploying the generated COBOL and JCL files. Also, you can specify an array of default values for various fields used in the generated JCL.
6. The *Generated Files* table shows the list of the files which will be generated in the Destination Project when you click the *Finish* button, with their type, name, and a brief description of their contents.
   The table's first column identifies each file's status regarding generation:
   - a red arrow means that the file already exists,
   - two yellow arrows mean that the file already exists and that it will be completed (cumulative effect) by the pending generation,
   - a green arrow means that the file does not exist yet.

7. Click the *Finish* button to generate your application.
   A message will appear to tell you that your application has been successfully generated.

Advanced Generation Properties

This is an image of the advanced generation properties of the zSeries Application Pattern Generator wizard:



Deployment

☑ Local Generation

COBOL Directory: COBOL

JCL Directory: JCL

□ Remote Generation

z/OS System:

COBOL Dataset: DBUSER.DBTEST.COBOL

JCL Dataset: DBUSER.DBTEST.JCL

JCL Options

High Level Qualifier (<HLQ>): DBUSER.DBTEST

Job Card:

```
//DBUSERC JOB ,
// MSGCLASS=H,TIME=(,4),REGION=28M,COND=(16,LT
```

Option	Value	Description
DBRMLIB	<HLQ>.DBRMLIB	Target dataset for the Data Base Request
SDSNLOAD	DB2.V7R1M0.SDSNLOAD	DB2 DSN System Library dataset
DB2DSN	DSN7	DB2 DSN Subsystem Name
DBBINDPK	DBBIND	Application DB2 Package Name
DBBINDQ	DBBIND	Application DB2 Bind Qualifier
DBBINDPL	DBBIND	Application DB2 Plan Name
USERID	DBUSER	Authorization Userid
LOADDSN	CUST.WAMTEST.LOADLIB	Target dataset for compiled programs
DBGRP	DBGRP	CICS Group name for resource definitions
SDFHAUTH	CICSTS.V2R2M0.CICS.SDFHAUTH	CICS SDFHAUTH dataset
SDFHLOAD	CICSTS.V2R2M0.CICS.SDFHLOAD	CICS SDFHLOAD dataset
DFHCSD	CUST.CICSTS22.DFHCSD	CSD dataset for CICS resource definitions
OBJDSN	<HLQ>.OBJLIB	Target dataset for object modules
TRANSYSL	CICSTS.V1R3M0.CICS.SDFHCOB	CICS Translator library dataset
LANGLIB	COBOL.V3R3M0.SIGYCOMP	COBOL Compiler library dataset
LNKLIB	CEE.SCEELKED	System Linkage Editor library dataset
COPYLIB	<HLQ>.COPYLIB	COBOL Copy Member dataset

In this dialog you are able to specify all of your deployment options. All of the options you specify in this dialog will be saved in the Eclipse preferences and restored the next time you visit the wizard, thus eliminating the need to continually modify these settings. The options presented are:

- Local and/or Remote generation. In this area of the dialog you can choose to generate the COBOL and JCL to the local project and/or directly to your MVS file system.
    - For local generation you will simply need to specify a directory location for COBOL and JCL files.
    - For remote generation you will need to have one or many existing Remote System(s) defined. Every defined z/OS system you have defined from the Remote Systems Explorer will be available from the z/OS systems combo box. After you have picked a z/OS system, you will then need to specify an existing data set for both your COBOL and JCL files.
- JCL Options. This area of the dialog allows you to provide your system specific information in order to correctly compile and bind the generated COBOL from the generated JCL. The High Level Qualifier specified will be used to replace any instance of <HLQ> defined in the JCL values.
    - **Note:** The default values will need to be customized to suit your environment’s setup. You are not required to use the generated JCL, but it is provided as a convenience to you.

Renaming Opportunities

The zSeries Application Pattern Generator wizard offers you several renaming opportunities for both the generated code and the generated interface. This allows the Web application to be easily adapted for both developers’ and users’ needs.

Page 2: Define Model

In the *Change the field names of* drop-down list, you can select the table(s) whose field names you want to rename. You make the changes to the field name in the list below. Blank and accented characters must not be used in field names. New names are taken into account in:

- the generated code,
- SQL orders host variables,
- the application layout (new default).

Page 3: Define Layouts

The Define Layouts pages allow you to define adequate labels for each field and action button positioned in your application's pages. This is done in the *Property/Value* table; in the *Value* column, you can change the default *Label*.

Page 4: Finish

This page's upper-right section helps you visualize the structure and names of the components to be generated. The two main branches are *Web page List* and *Remote Files List*.
You can directly enter changes in the names in this tree-like structure. These changes are dynamically reflected below in the *Generated Files* table.
NOTE: Such changes have no impact on the application interface.

Glossary

Action
An action is a data processing operation made available to the user of your Web application as a button. Available actions are Create, Read, Select, Update, and Delete. These actions are often called CRUD actions.

Data set
A data set contains a collection of fields and operations. It is the source of the information displayed on the page(s) of your Web application. Data set definitions are automated through the online connection to the corresponding database.

Destination project
This is the name of the Eclipse folder in which you want the generated application code to be saved.
The default destination project name is <*application_name*> specified on the first wizard page. Alternatively, zSeries Application Pattern Generator allows you to create a new destination project.

Detail page
A Detail page presents detailed information, describing one item selected on a List page. A Detail page may, for example, present personal information on an employee such as date of birth and salary. You can choose to make this page read-only or modifiable.

Field
A field is a particular area where the same type of information for all records in a database table is recorded.

Generator
The generator is the built-in component which generates your Web application and all of its associated files.
NOTE: This zSeries Application Pattern Generator wizard version implements *JSF, EGL, and COBOL (CICS) using CTG* generators.

Item
An item is a piece of information found in a List page, for example a name, number, or code. All items in the list are of the same type of information. You can

choose to allow the user to select an item to view more detailed information related to that item.

JAR

A JAR file is an archive which contains Java classes and folders. It is the equivalent of a ZIP file for .java files.

Key field

A key field is an area of a record in a database table which contains information which is unique in that table. No other field in the table contains the same information.

List page

A List page displays information in a list format, for example a list of employees. All items in the list are of the same type of information.

Operation

Operations are the processes implemented by your application for data management. They include Create, Read, Select, Update, and Delete.

The zSeries Application Pattern Generator Wizard allows you to choose the operations you wish to include in your Web application.

Package

The logic and data packages contain your final web application and all the files which have been generated to create the application. In the last page of the zSeries Application Pattern Generator wizard, you are required to name both packages. When generation is complete, the packages appear in the destination project in the workspace.

Pattern

A pattern acts as a template for the Web application you wish to generate. In composing a pattern, you define the data presentation, data access, and navigation aspects of your application. These depend on what functions are expected of the Web application and how you want the user to view and use data. A pattern allows you to make certain actions available to the user, such as data entry, selection, editing, and deletion.

Site map

The application site map is a non-interactive diagram that shows all the pages of your Web application and how they will be linked.

SQL

SQL stands for Structured Query Language, a programming language which allows you to create and manipulate relational databases on all major platforms. Relational databases store data in a number of linked tables. The Edit SQL option allows you to set up multi-table mapping. SQL requests allow you to add or delete records from these tables to change the value of fields of existing records.

Style sheet

The style sheet determines elements of the presentation of your application such as color and font. The wizard proposes a default style sheet. If you have created your own style sheet and saved it as a .css file in the workbench, you can use that instead.

zSeries Application Pattern Generator Wizard

The zSeries Application Pattern Generator Wizard consists of four sequential steps which allow you to rapidly create a Web application, based on a pre-defined pattern. Following the wizard, you select a pattern, a data source (one or more tables from a selected database), and actions you wish to make available to the user. You can customize and preview the layout of each page in your application.